

1 What is claimed is:

2 1. A composite reinforced thermoplastic sheet comprising a thermoplastic  
3 sheet and a fabric reinforcing layer adhered thereto, wherein said thermoplastic sheet  
4 comprises a polymer blend of ethylene-styrene interpolymers, polyolefin, and  
5 thermoplastic rubber and at least one fire retardant.

6 2. The reinforced thermoplastic sheet according to claim 1, wherein said at  
7 least one fire retardant is selected from the group consisting of: antimony trioxide,  
8 bromine fire retardant, and phosphate fire retardant.

9 3. The reinforced thermoplastic sheet according to claim 1, wherein said  
10 polymer blend further comprises a colorant.

11 4. The reinforced thermoplastic sheet according to claim 1, wherein said  
12 polymer blend further comprises an ultraviolet stabilizing package.

13 5. The reinforced thermoplastic sheet according to claim 1, wherein said  
14 polyolefin of said polymer blend comprises a metallocene polyethylene.

15 6. The reinforced thermoplastic sheet according to claim 1, wherein said  
16 thermoplastic rubber of said polymer blend comprises ethylene-propylene-diene rubber.

17 7. The reinforced thermoplastic sheet according to claim 1, wherein said  
18 polymer blend comprises between about 10-50% by wt. ethylene-styrene interpolymers,  
19 between about 20-70% by wt. polyolefin, and between about 10-30% by wt.  
20 thermoplastic rubber.

21 8. A composite reinforced thermoplastic sheet comprising a thermoplastic  
22 sheet and a fabric reinforcing layer adhered thereto, wherein said thermoplastic sheet is a  
23 polymer blend comprising about 30% by wt. ethylene rich ethylene-styrene interpolymers,

about 30% by wt. metallocene polyethylene, about 20% by wt. ethylene-propylene-diene rubber, about 15% by wt. bromine fire retardant, about 5% by wt. antimony trioxide, and about 1% by wt. ultraviolet stabilizing package.

9. The reinforced thermoplastic sheet according to claim 8, wherein said fabric reinforcing layer comprises a polypropylene knit fabric having a basis weight of about 2-6 oz/yd<sup>2</sup>.

10. The reinforced thermoplastic sheet according to claim 8, wherein said fabric reinforcing layer comprises a polyester knit fabric having a basis weight of about 2-6 oz/yd<sup>2</sup>.

11. The reinforced thermoplastic sheet according to claim 8, wherein said fabric reinforcing layer comprises a polypropylene non-woven fabric having a basis weight of about 2-6 oz/yd<sup>2</sup>.

12. The reinforced thermoplastic sheet according to claim 8, wherein said fabric reinforcing layer comprises a polyester non-woven fabric having a basis weight of about 2-6 oz/yd<sup>2</sup>.

13. A composite reinforced thermoplastic sheet comprising a thermoplastic sheet and a fabric reinforcing layer adhered thereto, wherein said thermoplastic sheet comprises a polymer blend of ethylene-styrene interpolymers, polyurethane, and thermoplastic rubber and at least one fire retardant.

14. The reinforced thermoplastic sheet according to claim 13, wherein said at least one fire retardant is selected from the group consisting of: antimony trioxide, bromine fire retardant, and phosphate fire retardant.

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1           15.    The reinforced thermoplastic sheet according to claim 13, wherein said  
2 polymer blend further comprises a colorant.

3           16.    The reinforced thermoplastic sheet according to claim 13, wherein said  
4 polymer blend further comprises an ultraviolet stabilizing package.

5           17.    The reinforced thermoplastic sheet according to claim 13, wherein said  
6 polyurethane of said polymer blend comprises an aliphatic polyurethane.

7           18.    The reinforced thermoplastic sheet according to claim 13, wherein said  
8 thermoplastic rubber of said polymer blend comprises ethylene-propylene-diene rubber.

9           19.    The reinforced thermoplastic sheet according to claim 13, wherein said  
10 polymer blend comprises between about 10-50% by wt. ethylene-styrene interpolymers,  
11 between about 20-70% by wt. polyurethane, and between about 10-30% by wt.  
12 thermoplastic rubber.

13           20.    A composite reinforced thermoplastic sheet comprising a thermoplastic  
14 sheet and a fabric reinforcing layer adhered thereto, wherein said thermoplastic sheet is a  
15 polymer blend comprising about 24% by wt. ethylene rich ethylene-styrene interpolymers,  
16 about 24% by wt. styrene rich ethylene-styrene interpolymers, about 28% by wt. aliphatic  
17 polyurethane, about 15% by wt. bromine fire retardant, about 5% by wt. antimony  
18 trioxide, about 3% by wt. colorant, and about 1% by wt. ultraviolet stabilizing package.

19           21.    The reinforced thermoplastic sheet according to claim 20, wherein said  
20 fabric reinforcing layer comprises a polypropylene knit fabric having a basis weight of  
21 about 2-6 oz/yd<sup>2</sup>.

1           22.    The reinforced thermoplastic sheet according to claim 20, wherein said  
2   fabric reinforcing layer comprises a polyester knit fabric having a basis weight of about 2-  
3   6 oz/yd<sup>2</sup>.

4           23.    The reinforced thermoplastic sheet according to claim 20, wherein said  
5   fabric reinforcing layer comprises a polypropylene non-woven fabric having a basis  
6   weight of about 2-6 oz/yd<sup>2</sup>.

7           24.    The reinforced thermoplastic sheet according to claim 20, wherein said  
8   fabric reinforcing layer comprises a polyester non-woven fabric having a basis weight of  
9   about 2-6 oz/yd<sup>2</sup>.